

WHAT IS CLAIMED IS:

1. An system for transaction settlement with an electronic cashing card having a non-authentication processing memory and an authentication processing memory, said system comprising:

means for updating an authentication balance stored in a balance area of the authentication processing memory and a non-authentication balance stored in a balance area of the non-authentication processing memory, said means updating the authentication balance to a balance amount after settlement when a transaction is settled by an authentication process having a requirement for a personal authentication to be matched, said means updating the non-authentication balance to an amount less than or equal to the stored authentication balance when the transaction is settled by the authentication process; and

means for comparing the non-authentication balance and the authentication balance and determining that an illegal process has been performed with the card when the non-authentication balance is larger than the authentication balance.

2. The system recited in claim 1, wherein:

when a transaction is settled by a non-authentication process wherein the personal authentication is not required to be matched, the balance amount after settlement is calculated based on the stored authentication balance and the non-authentication balance is updated to the balance amount after settlement; and

when a transaction is settled by the authentication process, the balance amount after settlement is calculated based on the stored non-authentication balance and both the authentication balance and the non-authentication balance are updated to the balance amount after settlement.

3. The system recited in claim 1, wherein:

when the transaction is settled by a non-authentication process wherein the personal authentication is not required to be matched, the balance amount after settlement is calculated based on the stored non-authentication balance and the non-authentication balance is updated to the balance amount after settlement; and

6 when a transaction is settled by the authentication process, the balance amount after
7 settlement is calculated based on the stored authentication balance and the stored non-
8 authentication balance, the authentication balance is updated to the balance amount after
9 settlement, and the non-authentication balance is updated according to a preset condition amount.

1 4. The system recited in claim 1, wherein the authentication balance and the non-
2 authentication balance are compared in each of successive transactions to be settled by a non-
3 authentication process wherein the personal authentication is not required to be matched, when
4 a count of the successive transactions completed is less than or equal to a predetermined number.

5 5. The system recited in claim 1, wherein:
6 a settlement amount limit is set for settlement of transactions by a non-authentication
7 process wherein the personal authentication is not required to be matched; and
8 said comparing and determining means determines that an illegal process has been
9 performed with the card when a disbursement amount, to be written in the non-authentication
10 processing memory as a disbursement history, exceeds the settlement amount limit.

11 6. The system recited in claim 1, wherein when the authentication process is invoked
12 to perform a deposit or to settle a transaction, a money amount is deposited for the
13 authentication process and is written to a predetermined area of the non-authentication processing
14 memory, the money amount comprising at least one of a predetermined cash amount and a
15 predetermined rate amount.

1 7. The system recited in claim 1, further comprising within the card:
2 arithmetic means for executing arithmetic calculations for the authentication process and
3 a non-authentication process wherein the personal authentication is not required to be matched,
4 said arithmetic means further controlling data reading and writing operations from and to the
5 non-authentication processing memory and the authentication processing memory; and
6 input/output means for executing data input/output operations between the arithmetic
7 means and an external unit.

1 8. The system recited in claim 1, wherein the card comprises an integrated circuit.

1 9. The system recited in claim 1, wherein the card is a prepaid card.

1 10. A method of transaction settlement with an electronic cashing card having a non-
2 authentication processing memory and an authentication processing memory, the method
3 comprising:

4 updating an authentication balance stored in the authentication processing memory and
5 a non-authentication balance stored in the non-authentication processing memory, the
6 authentication balance being updated to a balance amount after settlement when a transaction is
7 settled by an authentication process having a requirement for a personal authentication to be
8 matched, the non-authentication balance being updated to an amount less than or equal to the
9 stored authentication balance when the transaction is settled by the authentication process; and

10 determining that an illegal process has been performed with the card when a comparison
11 of the non-authentication balance and the authentication balance indicates that the non-
12 authentication balance is larger than the authentication balance.

11. The method recited in claim 10, wherein:

1 when a transaction is settled by a non-authentication process wherein the personal
2 authentication is not required to be matched, the balance amount after settlement is calculated
3 based on the stored authentication balance and the non-authentication balance is updated to the
4 balance amount after settlement; and

5 when a transaction is settled by the authentication process, the balance amount after
6 settlement is calculated based on the stored non-authentication balance and both the
7 authentication balance and the non-authentication balance are updated to the balance amount after
8 settlement.
9

1 12. The method recited in claim 10, wherein:

2 when the transaction is settled by a non-authentication process wherein the personal
3 authentication is not required to be matched, the balance amount after settlement is calculated

4 based on the stored non-authentication balance and the non-authentication balance is updated to
5 the balance amount after settlement; and

6 when a transaction is settled by the authentication process, the balance amount after
7 settlement is calculated based on the stored authentication balance and the stored non-
8 authentication balance, the authentication balance is updated to the balance amount after
9 settlement, and the authentication balance is updated to a preset condition amount.

1 13. The method recited in claim 10, wherein the authentication balance and the non-
2 authentication balance are compared in each of successive transactions to be settled by a non-
3 authentication process wherein the personal authentication is not required to be matched, when
4 a count of the successive transactions completed is less than or equal to a predetermined number.

5 14. The method recited in claim 10, further comprising determining that an illegal
6 process has been performed with the card when a settlement amount limit is less than a
7 disbursement amount to be written in the non-authentication processing memory as a
8 disbursement history, the settlement amount limit being set for settlement of transactions by a
9 non-authentication process wherein the personal authentication is not required to be matched.

1 15. The method recited in claim 10, wherein when the authentication process is
2 invoked to perform a deposit or to settle a transaction, a money amount is deposited for the
3 authentication process and is written to a predetermined area of the non-authentication processing
4 memory, the money amount comprising at least one of a predetermined cash amount and a
5 predetermined rate amount.

1 16. The method recited in claim 10, further comprising:
2 executing within the card arithmetic calculations for the authentication process and a non-
3 authentication process wherein the personal authentication is not required to be matched;
4 controlling within the card data reading and writing operations from and to the non-
5 authentication processing memory and the authentication processing memory; and

6 executing within the card data input/output operations between the card and an external
7 unit.

1 17. A computer readable medium encoded with a program for settlement of
2 transactions with an electronic cashing card having a non-authentication processing memory and
3 an authentication processing memory, said program comprising procedures for:

4 updating an authentication balance stored in the authentication processing memory and
5 a non-authentication balance stored in the non-authentication processing memory, the
6 authentication balance being updated to a balance amount after settlement when a transaction is
7 settled by an authentication process having a requirement for a personal authentication to be
8 matched, the non-authentication balance being updated to an amount less than or equal to the
9 stored authentication balance when the transaction is settled by the authentication process; and

10 determining that an illegal process has been performed with the card when a comparison
11 of the non-authentication balance and the authentication balance indicates that the non-
12 authentication balance is larger than the authentication balance.

1 18. The computer readable medium recited in claim 17, wherein:

2 when a transaction is settled by a non-authentication process wherein the personal
3 authentication is not required to be matched, the balance amount after settlement is calculated
4 based on the stored authentication balance and the non-authentication balance is updated to the
5 balance amount after settlement; and

6 when a transaction is settled by the authentication process, the balance amount after
7 settlement is calculated based on the stored non-authentication balance and both the
8 authentication balance and the non-authentication balance are updated to the balance amount after
9 settlement.

1 19. The computer readable medium recited in claim 17, wherein:

2 when the transaction is settled by a non-authentication process wherein the personal
3 authentication is not required to be matched, the balance amount after settlement is calculated

4 based on the stored non-authentication balance and the non-authentication balance is updated to
5 the balance amount after settlement; and

6 when a transaction is settled by the authentication process, the balance amount after
7 settlement is calculated based on the stored authentication balance and the stored non-
8 authentication balance, the authentication balance is updated to the balance amount after
9 settlement, and the authentication balance is updated to a preset condition amount.

1 20. The computer readable medium recited in claim 17, wherein the authentication
2 balance and the non-authentication balance are compared in each of successive transactions to
3 be settled by a non-authentication process wherein the personal authentication is not required to
4 be matched, when a count of the successive transactions is less than or equal to a predetermined
5 number.
6

1 21. The computer readable medium recited in claim 17, wherein said program further
2 comprises a procedure for determining that an illegal process has been performed with the card
3 when a settlement amount limit is less than a disbursement amount to be written in the non-
4 authentication processing memory as a disbursement history, the settlement amount limit being
5 set for settlement of transactions by a non-authentication process wherein the personal
6 authentication is not required to be matched.

1 22. The computer readable medium recited in claim 17, wherein said program further
2 comprises procedures for depositing a money amount for the authentication process and writing
3 the money amount to a predetermined area of the non-authentication processing memory when
4 the authentication process is invoked to perform a deposit or to settle a transaction, the money
5 amount comprising at least one of a predetermined cash amount and a predetermined rate
6 amount.

1 23. The computer readable medium recited in claim 17, wherein said program further
2 comprises procedures for:

3 executing within the card arithmetic calculations for the authentication process and a non-
4 authentication process wherein the personal authentication is not required to be matched;
5 controlling within the card data reading and writing operations from and to the non-
6 authentication processing memory and the authentication processing memory; and
7 executing within the card data input/output operations between the card and an external
8 unit.

1 24. A transaction settlement system comprising a transaction terminal and an
2 electronic transaction card readable by said transaction terminal, wherein:

3 said card includes memory storing an authentication balance and a non-authentication
4 balance, the authentication balance for transaction settlement by an authentication process
5 requiring a personal authentication to be matched and the non-authentication balance for
6 transaction settlement by a non-authentication process wherein the personal authentication is not
7 required to be matched; and

8 said system further comprises a control unit controlling updates to the authentication
9 balance and the non-authentication balance and detecting that an illegal process has been
10 performed with said card when a comparison indicates the non-authentication balance is greater
11 than the authentication balance.

12 25. The system recited in claim 24, wherein said system further comprises a
13 comparison unit comparing the stored authentication balance and the stored non-authentication
14 balance when a transaction is to be settled with said card.

15 26. The system recited in claim 24, wherein an authentication processing memory and
16 a non-authentication processing memory are included in said memory, the authentication
17 processing memory storing the authentication balance and the non-authentication memory storing
18 the non-authentication balance.

19 27. The system recited in claim 24, wherein a money processing memory storing both
20 the authentication balance and the non-authentication balance is included in the memory.

1 28. The system recited in claim 24, wherein said card further includes an input/output
2 interface for transferring data between said card and a device external thereto.

1 29. The system recited in claim 25, wherein said system further comprises an
2 arithmetic unit for performing arithmetic calculations for the authentication process and the non-
3 authentication process.

1 30. The system recited in claim 24, wherein said system further comprises a
2 synchronization unit executing a synchronization process after a deposit has been performed by
3 the authentication process, the synchronization process including updating a non-authentication
4 disbursement history in the memory based on the authentication balance after the deposit.

1 31. The system recited in claim 24, wherein said card further includes a read/write
2 controller updating the authentication balance and the non-authentication balance under control
3 of the control unit.

1 32. The system recited in claim 24, wherein said control unit is included in said card.

1 33. The system recited in claim 25, wherein said comparison unit is included in said
2 card.

1 34. The system recited in claim 29, wherein said arithmetic unit is included in said
2 card.

1 35. The system recited in claim 30, wherein said synchronization unit is included in
2 said card.

